Spatial and temporal use of estuary and upland habitats by wintering waterfowl on the Fraser River delta and north Puget Sound.

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The Fraser River delta and north Puget Sound (FRDNPS) provide important habitat for wintering and migrating waterfowl. However, the FRDNPS region is also home to an increasing human population. Conflict between the need for wildlife habitat and urban expansion has prompted DU to identify critical habitats for waterfowl. This research will form the basis of a cross-border conservation plan for the FRDNPS region. To understand the waterfowl-habitat relationship during the winter DU is 1) using radio-telemetry to identify temporal and spatial use of estuary and upland habitat by American wigeon (Anas americana) and Northern Pintail (Anas acuta) and 2) is sampling agricultural and intertidal habitats to estimate energy available to waterfowl. Our analyses suggest that individual waterfowl use the entire FRDNPS region. In addition, wigeon prefer upland agricultural lands and pintail select intertidal habitats. Habitat analyses indicate that agricultural lands provide significant energy for waterfowl, but that the amount of this energy decreases through winter. Seeds found in agricultural soils appear to provide less energy than either cover crops or remnant potatoes. Intertidal habitats (e.g. eelgrass, *Zostera spp*) provide high-energy estimates, but unlike agricultural resources, the energy available from eelgrass increases as winter progresses.